

Hot Tips

Good info for the new ham, and old stuff to refresh your memory



How to route coax into your home

Most of us are interested in being able to hear others the best we can, while enabling others to hear us just as well. To achieve this, many have installed an antenna outside, typically up on the roof. Although this kind of antenna arrangement is almost ideal for most local amateur work, we tend to find that the most difficult part of the installation is the routing of the coax (coaxial cable) from our outdoor antennas to our indoor radio rooms.

So, what are your options? It's assumed that you've already decided where in your home to install your radio. Getting the coax from the outside to the inside often requires creative routing, but the focus here is on the actual entry, often involving drilling through a wall. Let's explore a few methods.

Through the roof

Once you install your antenna on the roof, there are a few convenient ways to bring your coax into your house without snaking the coax across your siding, gutter, eave, or downspout. The three most common ways to route your coax into the house from the roof are through an attic vent, a static (no fan) roof vent, or a [sewer vent boot](#).



For an attic vent, slip the coax behind the attic vent grill and into the attic. You might need to drill a hole through the plywood frame or cut a hole in the screen, or both. Once you install the coax, be sure to add a drip loop to the coax, to prevent rainwater from following the cable inside. A roof vent is common on many larger houses, and you can cut the screen under the vent and slip the coax through it to the inside. Whether your coax is going through the attic vent or roof vent, be sure to seal the hole afterwards against bugs, using a small screen patch and [roof sealant](#).



Static roof vents

A sewer vent pipe provides ventilation for each drain in the house, and protrudes through the roof by a boot. Drill a hole in the boot, and slip the coax through the hole, then seal the hole with [weatherproofing roof sealant](#).

Once you route the coax into the attic, secure it to the trusses (rafters) instead of allowing it to drape or hang. Keep it away from walkways, where repair folks might walk on or into it. Afterwards, you can run the coax down a wall to your destination, or into the closet nearest your shack by way of a drilled ceiling hole.

Through the wall

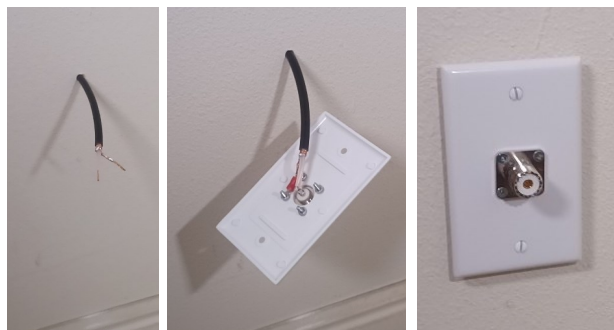
One of the simplest and yet least-conspicuous

Hot Tips

Continued



routing is drilling through your wall above your foundation or concrete footing. This means drilling a hole the size of your [grommet](#), whose inside diameter is the size of your coax. Use a [good stud finder](#) to locate not only the wall studs, but the electrical wiring.



Once you identify where the hole should go, drill the hole completely through the wall, *from the inside to the outside*. If your exterior wall has stucco, drill a pilot hole from the outside first, using a [masonry bit](#), then complete the drilling from the inside.



You'll be drilling through sheetrock, fiberglass insulation, plywood, foam insulation, then the exterior, which is likely aluminum siding. Pull the unfinished end of your coax through the



grommet, through the wall, to the [wall plate](#). Solder the coax to the [SO-239 bulkhead](#), then bolt the bulkhead onto the wall plate. Secure the plate to the interior wall and the grommet to the exterior wall, and it'll appear clean and professional.

If you want, you can drill a hole through your wall large enough to slip a section of PVC pipe into it. This will allow you to add, remove, or change the coax that you put through your wall. Inside or outside, you can cover the pipe ends with a small, [plastic junction box](#) to seal out weather, bugs, and small, curious fingers.



Another way to go through your wall is through your foundation or concrete footing. This requires drilling through several inches, sometimes a foot or more, of concrete by a [hammer drill](#) and a [concrete bit](#), especially a bit that can handle rebar.

Through the window

A (bedroom, den, office, dining room, or sliding glass) window also provides a convenient location to route your coax into your home from the outside. One way to make use of a window this way is to use a *pass-through*, of which there are several types. The [standard pass-through](#) is one that requires your window to close on the device, and is size-customizable.

Complete instructions on how to construct a [pool-noodle pass-through](#) for a



Hot Tips

Continued



temporary coax installation and routing are available. You can also purchase a ready-made [flat pass-through](#), which are made to go under or around windows.

Through the floor

If your house has a crawlspace or an unfinished basement, you can often route your coax from under your floor. This doesn't mean you should simply drill a hole in your floor, although you can definitely do that, if you find that's more convenient. But I recommend routing the coax under the floor, then up the wall a few inches between studs, where you can install a wall plate as described above.

Some have found that coming from down below works better for them where they have installed an antenna apart from their houses, like on a tower or a shed. In those cases, they might want to run the coax through a buried PVC pipe. Some use *direct-burial* coax, which is meant to come in direct contact with dirt without damaging the jacket.

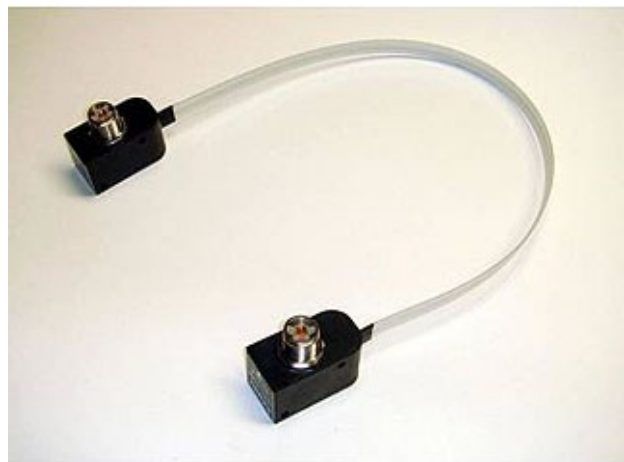
Beware

These precautions might save you a headache:



- Avoid making sharp bends in the coax; try to curve it around a corner instead.

- Don't lay or route the coax where it can get stepped on or snagged.
- Avoid pinching the coax by the edge of a door, window, furniture, or other means.
- Don't route coax inside heating and ventilation ductwork, sewer vent pipes, or dryer hoses, even if it's no longer being used for that purpose (code violation in the US).
- Don't cut any glass to route the coax through the window.
- Avoid placing any coax connectors in an underground pipe, if possible, even if they're silicone-wrapped or taped.
- Resist purchasing used coax, or coax that's more than six or seven years old.



Flat pass-through

Others

This list is by no means exhaustive; you can likely think of other good ways to bring coax into your house. Keep in mind that **safety is your highest priority**, with appearance at a distant second place, but still important if you want to keep your spouse happy with your amateur radio home entry solution.

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